LEC 2020 Water Supply Plan - Subregional Models
Comparison of Existing (1995) and Future (2020) Condition for the Subregional Models

	Existing (1995) Condition	Future (2020) Condition
Climate	The 1988 to 1995 climatic record was used for evaluations of the Existing (1995) Condition. Rainfall and potential evapotranspiration are the key climatic inputs. The same climatic record is also used for the evaluation of the Future (2020) Without Project Condition and will be used in the evaluation of plan alternatives.	Just as for the Existing (1995) Condition, the 1988 to 1995 climatic record was used to evaluate the Future (2020) Condition. This same climatic record will be used for the evaluation of all plan alternatives. Rainfall and potential evapotranspiration are the key climatic inputs.
Population and Socio-Economic Conditions	The Existing (1995) Condition reflects actual 1995 population and socio-economic conditions. Population and socio-economic conditions enter into and affect the Existing (1995) Condition analysis largely through their impact on water demands.	Projections of 2020 population and socio-economic conditions for all areas are based on the medium range projection developed by the University of Florida, Bureau of Economic and Business Research. This information, also used for the District Water Supply Assessment (DWSA), was modified as appropriate based on submittals from local utilities that were requested by the District.
Land Use for Lower East Coast and Lake Okeechobee Service Areas	For the portions of the Coastal Basins Covered by the Water Preserve Area Land Suitability Analysis, land use data updated through 1994 were available and were used for the analysis of the Existing (1995) Condition. For the remaining portions of the Coastal Basins the latest data available were the 1988 land use data developed for the Draft Lower East Coast Regional Water Supply Plan.	For the Coastal Basins for 2020, land use projections are based on future land use maps (2010 or most recent) and are modified to reflect existing development and natural areas already set aside as preservation or mitigation.
Natural Area Land Cover (Vegetation)	Recently updated information on vegetation classes and their spatial distribution prepared by the District was used for the natural areas. The updated information include improved classification of wetland land cover types and generally reflect conditions in the 1990 to 1995 period.	The 2020 vegetation classes and spatial distribution will remain the same as those proposed for the Existing (1995) Condition.
Urban and Agricultural Water Demands	• For the analysis of the Existing (1995) Condition, historical 1995 data on public water supply wellfield pumpages were used. The same public water supply pumpages are used for each of the 8 years of the analysis. • Irrigation demands in the Coastal Basins were based on land use and the daily climatic data for the 8 years of the analysis.	• For all areas, the University of Florida Bureau of Economic and Business Research (BEBR's) medium range projection for population growth is used. This information was modified as appropriate based on submittals from local utilities requested by the District. • Average annual demands are projected for public water supply based on submittals from LEC utilities.
Physical Facilities & Operations – Water Conservation Areas	Existing (1995) water management system and practices including: • No net outflow from Water Conservation Areas (WCA) if water level is less than minimum operating criteria in canals of Loxahatchee National Wildlife Refuge (WCA-1): 14 ft. NGVD, WCA-2A: 10.5ft. NGVD, WCA-3A: 7.5 ft. NGVD. If water is available from Lake Okeechobee, it may be passed through the WCAs to LECSA. • No regulatory releases to tide from Water Conservation Areas. • C&SF Interim Regulation Schedule for the Loxahatchee National Wildlife Refuge (WCA-1). • Current WCA-2A & 3A regulation schedules. • For the southern Palm Beach Subregional Model, the topography in WCA 1 was compiled using information from the University of Florida. • For the Broward Subregional Model, the topography in the WCAs and Everglades National Park was based on a modification to the topographic information as estimated by the Across-Trophic-Level System Simulation	1995 water management system and practices with the following changes: • No net outflow from Water Conservation Areas if the water level is less than Minimum Level marsh triggers or less than minimum operating criteria in canals of the Loxahatchee National Wildlife Refuge (WCA-1): 14 ft., WCA-2A: 10.5ft., WCA-3A: 7.5ft. If water is available from Lake Okeechobee, it may be passed through the WCAs to LECSA. • Marsh level triggers will be those used in the Draft Lower East Coast Regional Water Supply Plan alternative 5. • Rainfall driven operational criteria for determining timing of deliveries to and discharges from WCA 2A and 3A with quantity adjusted to approximate Best Management Practices Replacement water quantities. • Structural modifications per federally authorized Modified Water Deliveries project[1] • The topography in the WCAs and Everglades National Park will be the same as that used in the Existing (1995) Condition.

	Existing (1995) Condition	Future (2020) Condition
	(ATLSS) model. • For the Dade/ Lake Belt Subregional Model, the topography in WCA 3B is consistent with recent USGS surveys (USGS Report, December 1995) with the appropriate datum conversion from 1988 NAVD to 1929 NGVD. The topographic data within Everglades National Park was compiled utilizing the USGS and Beadman Corp. survey points.	• ECP facilities, including STA-1E, STA-1W, STA-2, STA-3/4, STA-5, and STA-6 and supporting modifications to the conveyance system. • C-51W federally authorized project including structures 2-155A and pump station S-319.
Physical Facilities & Operations – Everglades National Park	Existing (1995) water management system and practices including: • Water deliveries to Everglades National Park are based on the current Experimental Rainfall Delivery Plan for flows to Shark River Slough via S-333. • Test 7 Phase 1 Operations of Experimental Program of Water Deliveries to Everglades National Park.	1995 water management system and practices with the following changes: • The Federally authorized Modified Water Deliveries to Everglades National Park Project using a modified rainfall delivery plan to more closely replicate natural system like conditions consistent with WCA-3A rain-driven operation.[1] • Federally authorized C-111 Project for Taylor Slough and East Panhandle.[2]
Physical Facilities & Operations – Lower East Coast Service Area	Existing (1995) water management system and practices including: • Existing C&SF system and operating rules in effect in 1995. • Existing secondary drainage/water supply system. • Existing public water supply wellfields and locations. • Location of Northwest Dade Lake Belt's existing mines included in Land Use information.	1995 water management system and practices with the following changes: • LEC utility wellfield locations and distribution based on utility preferred locations as submitted to the District in January 1999. Generally, existing wellfields to the east are preferred to builing new western wellfields in LEC SA 1 and 2. • Broward secondary canal recharge network based on the Interim Plan for Lower East Coast Regional Water Supply [3] • Miami-Dade County utility aquifer storage and recovery based on the approved Interim Plan for Lower East Coast Regional Water Supply [4] • Selected elements of L-8 project[5] • Northwest Dade Lake Belt area permits for excavation of limerock will be exercised. • Operational adjustments to try to maintain water levels in coastal canals to meet saltwater intrusion criteria and Minimum Levels in the Biscayne Aquifer as proposed in the Interim Plan for Lower East Coast Regional Water Supply and draft Minimum Flows and Levels documents.[6] • The approved Interim Plan for Lower East Coast Regional Water Supply identifies the construction of a Hillsboro Canal pilot ASR facility. This facility will consist of up to 20 Surficial aquifer system production wells, and 4 ASR wells. In addition, a separate pilot project in cooperation with Palm Beach County consisting of 10 Surficial aquifer system production wells, and 1 Floridan Aquifer Storage and Recovery well will be constructed to provide additional information on ASR operation in the Hillsboro Canal area.
Region-wide Water Management and Related Operations	• The analysis of the Existing (1995) Condition reflects the existing water shortage policies as reflected in South Florida Water Management District rule 40E-21. The impacts of declarations of water shortages on utility water use reflect assumptions contained in the Draft Lower East Coast Regional Water Supply Plan for the 2010 base case. These are that Phase 1 restrictions result in a 10% decrease in water use, while Phase 2 results in a 25% decrease, Phase 3 a 40% decrease and Phase 4 a 55% decrease. Restrictions are applied to the portion(s) of the LECSAs affected locally by low ground water levels.	The assumptions for the Future (2020) Condition are the same as for the Existing (1995) Condition.

	Existing (1995) Condition	Future (2020) Condition
	• Implementation of supply side management in the Lake Okeechobee Service Area is evaluated to mimic existing District practices as detailed in the District publication Lake Okeechobee Supply-side Management Plan, September 1991.	

[1] The Modified Water Deliveries to Everglades National Park Project provides structural modifications to enable the restoration of more natural water flows to Shark River Slough in Everglades National Park. Components include structures to improve conveyance from WCA-3A to WCA-3 B and from WCA-3B to Everglades National Park, removal of an existing levee and canal (L-67 Extension) within Everglades National Park, a seepage control levee, canal and pump station to prevent additional flooding in the 8.5 square mile area and the Miccosukee Indian Camp, and adding pump station to return captured seepage water to Shark River Slough.

[2] The C-111 project consists of structural and non-structural modifications within the C-111 basin, which will improve hydroperiods in Taylor Slough, Shark River Slough and the eastern Panhandle areas of the Everglades. It will maintain the existing flood protection within the agricultural areas adjacent to C-111. The C-111 Project Canal operations will be consistent with the authorized levels (aka Base '83).

[3] This component is to be implemented as a result of the Interim Plan for Lower East Coast Regional Water Supply and includes pump stations and structures which would maintain higher levels in secondary canals in eastern Broward County between the Hillsboro and the North New River Canals during the dry season. The selected canals are located where recharge from the canals would help to hold back the salt water front and protect the production capability of wellfields to the east.

[4] This component is to be implemented as a result of the approved Interim Plan for Lower East Coast Regional Water Supply and includes ASR wells and related facilities that would be installed associated with wellfields of the Miami Dade Water and Sewer Authority Department. These facilities would be operated to store water in the Floridan Aquifer in the wet season and recover this water in the dry season. For the Future (2020) Condition the evaluations were for a daily injection and recovery capacity of 150 mgd, a maximum recovery percentage of injected water of 90% an annual injection period of 7 months and an annual recovery period of 5 months.

[5] This component is to be implemented as a result of the Interim Plan for Lower East Coast Regional Water Supply. It includes a structure to help restore the Loxahatchee Slough and an improved structural connection from the West Palm Beach Water Catchment Area to the Loxahatchee Slough.

[6] MFL's proposed in July 1998 (1998, SFWMD) modified to reflect new criteria in 6 canals: C-51@S-155 - 7.80; C-16@S-40 - 7.80; C-15@S-41 - 7.80; C-6@S-26 - 2.00; C-4@S-25B - 2.20; C-2@S-22 - 2.20 NGVD.